



Idaho Department of Fish and Game

LAKE PEND OREILLE PREDATION RESEARCH QUARTERLY REPORT

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Illustrations were obtained from J.R. Tomelleri

Acoustic transects in 2002 (111 miles) were increased by 66% compared to 2000 and 2001 (74 miles for both years). By increasing our transect miles we were able to count more individual pelagic predator size targets (> 17") than in previous years (33 in 2002 compared to 15 and 12 in 2000, 2001, respectively). To be considered a pelagic predator, acoustic targets (i.e. fish) had to be > 17", had to be in water that was at least 230 feet deep and the target could be no closer than 30 feet from the bottom of the lake. These parameters were used for the past 4 seasons and adhered to during 2002 in order to

Pelagic Predator Counts Increase

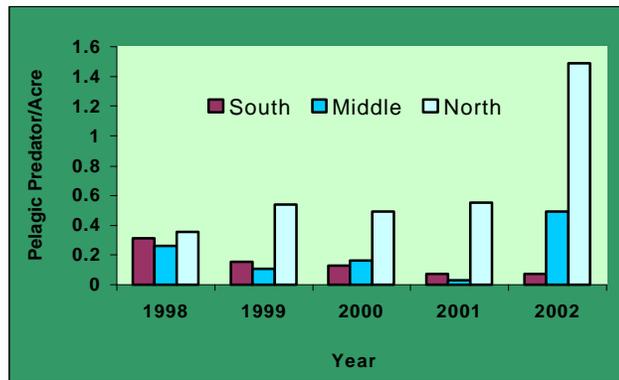


Figure 1. Pelagic predator (> 17") densities (fish/acre) for all three lake sampling sections since 1998.

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observe any changes in the pelagic predator counts due to increased transect mileage. Though biologist are still processing acoustic data, it is hoped that with the increased transects, population estimates will meet our confidence limit objectives of +/- 50%. Preliminary estimates of predator densities based on hydroacoustic measurements indicate increasing numbers of pelagic predators in the middle and northern sections of the lake (Figure 1).

Sonic Tags Calibrated and Ready for Surgery

Ten sonic tags to be used in our tagging study were calibrated on August 1st. The calibration was performed in order for us to determine if any tags were not functioning properly. Tags were lowered to depths of 50, 100 and 150 feet, respectively, while a researcher used a hydrophone to measure the acoustic derived depth of the tag.

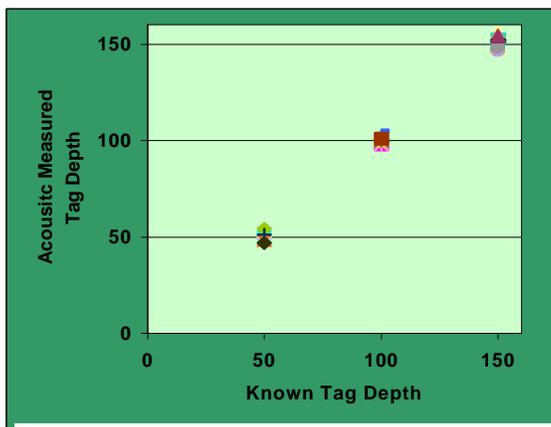


Figure 2. Known tag depth plotted against acoustic measured tag depth (10 measurements). Depth measurements in feet.

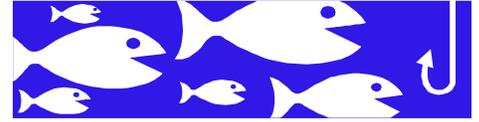
Acoustic measured tag depths ranged from 47-52 ft, 98-105 ft and 147-156 ft with each corresponding test interval (i.e. 50, 100 and 150 ft). Measured depths were regressed against known depths and were found to be highly correlated ($r^2 = 0.99$) (Figure 2). Tags are now ready to be surgically implanted into LPO predators this coming quarter (Figure 3).



Figure 3. Sonic tag being surgically implanted into the abdomen of a 26" lake trout.

This quarterly report contains preliminary data and conclusions that are not citable.

Concerned Fishermen Recruited to Help Collect Target Size Predators for Tracking Study



Both fishermen and outfitters have been contacted during the last quarter asking if they would be willing to catch fish for our sonic tagging study. The purpose of our tagging study is to track seasonal movements and determine depth distribution patterns of lake, rainbow and bull trout larger than 5 pounds. The study will be implemented over the next three years and aid researchers in developing acoustic techniques to monitor predator populations. Many fishermen as well as Lake Pend Oreille Idaho Club members voiced their concern about the LPO fishery and were eager to lend a hand. Currently we have three guides and three fishermen willing to coordinate with our tagging efforts along with 4 marinas located around the lake. On September 10th we received our first call from a guide whose client had landed a 10 lb. 28" rainbow trout near Camp Bay. We retrieved the fish and held it in a suspended net pen in Scenic Bay. Unfortunately, the fish was found dead 5 hours later presumable due to handling stress. We decided to hold off on our tagging efforts until water temperatures cooled below 60°F to reduce as much handling stress as possible. If you are interested or know a particular person who would be interested in helping out, please contact Tom Bassista at (208)683-9218 (IDFG LPO Research Station) or at (208)683-0920 (home phone) or tbassista@idfg.state.id.us.

Fish Surgery Protocols Developed and Tested

During this past quarter, researchers developed surgery protocols based on observations made while working with Avista Utilities bull trout researchers and published scientific literature. A surgery table was constructed and all necessary surgical utensils and equipment was purchased (Figure 4). Five "dummy" sonic tags were obtained and used for practicing surgery techniques and for determining infection/survival rates of tagged fish. Test fish were obtained during electrofishing operations on Clark Fork River and fish were held at the Cabinet Gorge Hatchery near Clark Fork, ID. On July 25th, three brown trout and one Northern pikeminnow (all fish >17") were surgically implanted with dummy sonic tags. After three days of being held in one of the hatchery raceways, two of the brown trout and the pikeminnow were accidentally released back into Clark Fork River by other researchers who did not realize the fish were tagged and being

Figure 4. New surgery table constructed for predator tagging study. Note that aerated water is continually pumped over the fishes gills to ensure survival.



New Boat Built for Predator Research

Our new 22 foot Sea Sport is finished being built and ready to be picked up. The new boat will act as a research vessel for the predation study and will be housed in Scenic Bay next to the Lake Pend Oreille Research Station in Bayview. Our new vessel will greatly aid predator researchers who will be out tagging and tracking fish into this fall and winter field seasons. Technicians are scheduled to pick up the boat in early October.



Questions or comments on this quarterly report should be addressed to: Tom Bassista or Melo Maiollic, PO Box 806, Bayview, Idaho 83803, ph# (208)683-9218



held for observation. Fortunately, the researchers noted that the fish were lively and swam away immediately after they were released. The remaining brown trout, which went unnoticed by the releasers, was examined after 13 days and was found to be in excellent condition with no signs of infection either externally or internally. On August 7th, 5 additional brown trout (all fish > 18") were surgically implanted with tags and held for 6 days. After 6 days the fish were examined internally and externally, had the sonic tags removed, and released back into the river. All fish survived and were found in excellent condition with no signs of infection.

Activities for Next Quarter

During next quarter, researchers will continue their efforts in working with LPO fishermen to obtain target size predators for sonic tag implantation and begin collecting fish tracking data. In the office work will continue on processing acoustic data collected during both day and nighttime surveys. Work will begin to define the different fish communities of the lake based on acoustic distribution measurements.

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